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ALLEGHENY FOREST EXPERIMENT STATION*

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Forest Service

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SEED DISPERSAL OF SOUTHERN WHITE CEDAR 2.51

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The literature on southern white cedar, Chamaecyparis thyoides (Linnaeus) Britton, Sterns, and Poggenberg, contains nothing very definite as to time of seed fall, although the frequency of heavy crops is mentioned. Korstian and Brush in U.S.D.A.Technical Bulletin 251, page 16, state "The cones mature in early autumn and, under normal conditions, open and release the seeds soon afterwards."

Because of the scarcity of information on the seeding habits of this species, and because of its high technical value and the desirability of extending the area now in cedar, some observations of its seed crop were started at the Lebanon Experimental Forest in Burlington County, New Jersey, in the fall of 1937.

Four traps, each 4 feet square, were set up within a small isolated stand of cedar. They were placed somewhat at random, the only controlling factor being that they must be accessible when the water level in the swamp was high. It was planned to obtain data only on the period of fall; presumably many more traps would be necessary to obtain an accurate measure of the quantity of seed. The traps were examined at the intervals, and with the results shown in the table.

From the monthly summary it will be noted that the fall decreased after November, but that some seed was still falling as late as August 12; the fall may continue after this date. The total seed received in two of the traps was notably larger than in the other two; very evidently a larger sample should have been taken if the object had been to get a sound measure of the abundance of the fall. On the basis of the sample taken one seed in a trap represents 680.6 per acre.

The greatest fall of seed occurred during periods of high wind when there was no precipitation. Otherwise there seemed to be no correlation between weather conditions and seed fall. The observations will be continued to determine if the 1937-38 fall is typical of the species.

Samples of seed were tested and germination was found to be poor. However, white cedar seed is notoriously slow to germinate, and is known to hold over for long periods. It is therefore believed the seed had a higher viability than the tests indicated. Because of the small size of the seed no cutting tests were made.

*In cooperation with the University of Pennsylvania

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Number of seed in traps

Date 1937	Trap No. 1	2	3	4	Total
October					
22	133	49	139	76	397
25	190	37	104	74	405
27	208	100	175	117	600
29	27	28	29	36	120
Total for October					1522
November					
1	284	229	301	214	1028
3	200	121	262	153	736
5	34	21	34	22	111
8	59	41	69	39	208
10	198	114	184	141	637
12	19	19	10	16	64
15	60	40	95	43	238
17	13	14	30	4	61
19	76	62	89	77	304
22	94	22	108	60	284
24	17	18	22	17	74
29	109	47	83	55	294
Total for November					4039
December					
1	62	46	86	41	235
3	68	45	47	32	192
7	70	51	60	42	223
9	151	74	116	96	437
11	32	30	59	41	162
13	6	22	11	2	41
15	44	27	39	30	140
17	0	0	5	1	6
20	65	61	96	61	283
22	34	33	54	35	156
27	99	43	39	38	219
30	29	8	27	15	79
Total for December					2173
1938 January					
3	18	24	27	27	96
5	41	38	33	20	132
10	44	32	85	76	237
14	28	13	16	15	72
19	75	40	57	38	210
22	27	33	30	17	107
24	30	34	17	23	104
27	216	217	207	184	824
29	6	7	7	4	24
Total for January					1806

Date 1938	Trap No. 1	2	3	4	Total
February					
1	50	49	43	60	202
3	73	56	51	85	265
5	55	39	60	34	188
7	32	41	74	39	186
10	36	23	43	31	133
14	20	10	20	16	66
16	7	6	15	7	35
18	10	8	10	5	33
23	11	12	12	11	46
25	9	17	20	13	59
28	15	16	12	28	71
Total for February					1284
March					
8	66	28	44	35	173
14	1	4	6	8	19
18	2	0	1	3	6
23	7	2	14	6	29
30	5	0	0	2	7
Total for March					234
April					
4	1	1	0	2	4
11	2	0	3	0	5
16	15	6	5	7	33
19	0	0	0	0	0
23	0	0	0	0	0
29	0	0	0	0	0
Total for April					42
May					
3	8	3	4	2	17
9	3	3	5	7	18
12	8	0	8	3	19
21	9	0	1	6	16
Total for May					70
June					
1	3	7	11	13	34
Total for June					34
July					
7	25	19	25	6	75
29	34	11	27	12	84
Total for July					159
August					
12	9	6	11	15	41
Total for August					41
GRAND TOTALS -	3382	2207	3377	2438	11,404